

## ORTHOPEDIC SPLINT BACKGROUND OF THE INVENTION

### 1. Field of the Invention.

5 The invention relates to an orthopedic splint for maintaining the knee in a rest position, specially after surgery on the posterior cruciate ligament.

### 2. Description of the Prior Art.

An orthopedic splint for maintaining the knee in a rest position comprising a covering section with stabilizing sticks arranged in pockets as well as Velcro®  
10 strips to fasten the covering section which is wrapped around the leg is known under the product name Medicom Classic for example. The covering section has wings fastened on it by means of hook and loop strips sold under the trademark VELCRO thanks to which the splint may be adapted to different leg sizes. This splint is used for injuries of the anterior cruciate ligament, the meniscus and the  
15 like. When the knee is normally stretched, the posterior cruciate ligament is tense. When the patient is lying, the dead weight of the leg is pulling the calf into the so-called posterior drawer and increases thus the tension on the posterior cruciate ligament. The strain thus exerted onto the posterior cruciate ligament, specially after reconstructive surgery, should be avoided in order to accelerate the healing  
20 process and to prevent the ligament from lazing.

## SUMMARY OF THE INVENTION

An object of the present invention is therefor to provide an orthopedic splint for maintaining the knee in a rest position, by means of which the posterior cruciate ligament is relieved.

25 According to the invention, an orthopedic splint is provided comprising a covering section with stabilizing sticks as well as strips to fasten the covering section which is wrapped around the leg, wherein the covering section has a padding for the calf in the corresponding area. The padding for the calf is preferably sticking out of the splint in direction of the Achilles tendon and is  
30 provided on its lower part with an incision where it encompasses the Achilles tendon on both sides.

According to a preferred embodiment of the invention, the padding for the calf is consisting of a foamed body and is reinforced on the side turned away from the leg with a plastic brace, whereas the foamed body has a radius enabling it to

snug the calf. The padding for the calf is fastened on the inner side of the covering section by means of a Velcro® fastener.

### BRIEF DESCRIPTION OF THE DRAWINGS

The invention is described with more details with the help of the following  
5 drawings:

Fig. 1 shows a top view of an orthopedic splint with a padding for the knee in an open position;

Fig. 2 is a schematic diagram of the splint shown in Fig. 1 applied to a knee;

Fig. 3 shows an open splint slightly amended with respect to Fig. 1 without  
10 padding for the calf;

Fig. 4 is a top view of a padding for the calf;

Fig. 5 is a lateral view of the padding shown in Fig. 4;

Fig. 6 is a sectional view taken along the line A-A of Fig. 4;

Fig. 7 is a section view taken along the line B-B of Fig. 4.

### 15 DESCRIPTION OF THE PREFERRED EMBODIMENT(S)

The orthopedic splint 1 for maintaining the knee in a rest position according to Fig. 1. The central part 2 and the lateral parts 3, 4 are removably connected for example by means of Velcro® fasteners so that they may be adapted to different leg sizes or situations. Stabilizing sticks 6 are arranged on the sides, that is in the  
20 areas being located at the side of the knee when the splint is applied. The sticks are preferably removably placed in pockets. The covering section is provided on its outer side with a Velcro® fleece onto which Velcro® strips 5 arranged on the outer side of lateral part 4 may be meshed. Radial Velcro® strips 7 fastened to the inner side of the covering section are responsible for the firm position of the splint on the  
25 leg. The radial Velcro® fasteners are guided outwardly through opposite eyes 8 and are then folded and may also be connected to the Velcro® fleece. The lower end of the covering section is provided with a padding 9 for the calf, the padding having an upper bulging section 10 which is tapered downwards and which ends in two extremities 11, 12 separated by a split. The padding 9 for the calf is sticking  
30 out of the lower part of the covering section.

Fig. 2 shows in a schematic diagram how the splint 1 is applied to the leg. A leg with thigh 15, knee 14 and calf 13 is shown. The splint is tightly wrapped around the leg by means of velcro® strips guided through eyes 8. The upper, anterior Velcro® strips are thereby pushing the thigh backwards, the lower,

posterior Velcro® strips are supporting the padding for the calf. The padding 9 for the calf, which is connected to the central part 2 of the covering section by means of a Velcro® fastener, is pushing onto the calf and exerts a forward directed force onto calf 13. It thus prevents the calf from being urged, in the area of the knee, into the so-called posterior drawer, since this would result in a lax ingrowth of the posterior cruciate ligament after surgery. It may also be seen that the padding for the calf is extending into the area of the Achilles tendon, which it supports laterally with its extremities 11, 12.

Fig. 3 is showing a smaller, slightly amended embodiment of the splint of Fig. 1, which has less Velcro® strips 7' and less eyes 8'. The padding for the knee is not inserted and the fleece strips 16, which may be meshed with the Velcro® strips of the padding for the calf, may be seen. Thanks to the Velcro® fastener between the padding for the knee and the covering section the splint may be individually adjusted to the leg.

The padding 9 for the calf according to Fig. 4 - 7 has a bulging upper section 10 that is tapered downwards and ends in two extremities 11 and 12 as already shown in Fig. 1. It comprises a foamed body snugly fitting the calf, whereas the inner side of the foamed body is sheathed with a material kind to the skin and whereas the outer side is supported by a plastic brace 18. The plastic brace is extending over the biggest part of the padding's 9 length, its extremities inclusive. The padding 9 for the calf has inside and outside a radial radius adjusted to the calf. The Velcro® strips 17 which are arranged on the outer side of plastic brace 18 and which may be meshed with the fleece strips 16 of Fig. 3 are hinted at in Fig. 4.